

argentata, the cotton moth ; both specimens were in perfect order, not in the least rubbed or worn. In Oct., 1880, I took several specimens about the city, also apparently recently emerged.

TWO NEW SPECIES OF ISOSOMA.

BY G. H. FRENCH, CARBONDALE, ILL.

ISOSOMA ALLYNII, n. s.

Female.—Average length .10 of an inch. Color of body and antennæ uniform black, the first with a slight greenish lustre. Head about .025 of an inch wide, about two thirds as long ; the antennæ a little enlarged at the ends, hairy, microscopic hairs moderately scattered over the head and thorax. Thorax, as well as head, punctured ; wings hyaline, dotted over with microscopic hairs, the thorax in its widest part about the width of the head. Abdomen gradually tapering from near the base, the ovipositor slightly exerted. The color of the legs vary slightly ; in five specimens the anterior and posterior legs have the femurs fuscous except at the ends ; the tibiæ with basal half fuscous, the rest yellow ; the terminal joint of tarsi fuscous, the rest yellow ; the middle pair of legs are yellow throughout except the terminal tarsi. Two specimens have all the femurs fuscous, yellow at the ends. One specimen has all the femurs pale red, and the tibiæ fuscous, but this is probably a change from yellow by the poison bottle used in killing. One is marked like the first five, with the yellow replaced by pale red ; another is like the first five, except that the middle tibiæ are a little clouded at base.

Male.—In this sex the body, wings and antennæ are colored like the females, but the antennæ are a little more slender at their ends. The head and thorax have about the same measurements, but the abdomen is a little shorter, the whole insect being from .06 to .07 of an inch. The legs have all the femurs yellow, front tibiæ yellow, middle and hind tibiæ fuscous, except at the apices, which are yellow ; feet as in the females.

Larvae.—These are found inside stalks of growing wheat in Southern Illinois, before the ripening of the grain, and in the straw and stubble during the rest of the summer. They are found mostly in the interior of the first and second internodes below the one supporting the head, usually singly, but sometimes more than one in the same internode. They pro-

duce no swelling or gall, as do the larvæ of *I. Hordei*, but feed upon the soft tissue of the interior of the stalks. They are about .15 of an inch long, rather slender, tapering slightly toward either end, footless, but when in motion seeming to have the power of pushing out the substigmatal portion of the segments, a distinct transverse head about two thirds the width of body, with a pair of brown jaws. Color yellow, approaching a pale orange.

Pupæ.—These vary from about .08 to .12 of an inch long, are black and of the usual hymenopterous form. About four fifths of the larvæ observed changed to pupæ and produced the imago, or died, the past season from July 20th, when the first imago was found, to August 20th, or perhaps better, underwent their changes between July 8th and August 20th; but I think this the effect of the dry season. Those examined the last of November were in the pupa state in the interior of the stalks down close to or in the substance of the joint, both in the fields and in my breeding jars. Those were in the larva state the last of August. It is probable they pass the winter in the pupa state under ordinary circumstances to produce the imagines in the spring, and that those hatching during July and August perish without ovipositing.

Described from 10 females and 4 males.

I take pleasure in dedicating this species to Robt. Allyn, LL.D., President of the Southern Illinois Normal University, as a slight acknowledgment of valuable aid and encouragement he has rendered me in my work.

ISOSOMA ELYMI, n. s.

Length .07 of an inch. A little more slender than the preceding; width of head and middle of thorax .02 of an inch. Color black without metallic lustre. Head and thorax very sparsely covered with hairs; antennæ scarcely enlarged at the ends; wings hyaline, microscopically hairy; legs rather more slender than in the preceding species, or in *I. Hordei*, all fuscous throughout, except that the joints are a little pale. Abdomen about as in the other species, the ovipositor slightly exerted.

Larvæ.—These are found on the interior of the culms of *Elymus Canadensis* in about the middle internodes of the stalks, very much as the larvæ of the preceding species are to be found on the interior of wheat culms. While, however, the wheat larvæ are generally just above the joint, these may be found in any part of the interior of an internode.

Both feed upon the soft tissue of the interior of the stalk, and do not produce any enlargement; the only noticeable effect from the outside is that internodes containing larvæ are usually shorter than others. The larvæ are footless, about .10 of an inch long when still, and 0.4. wide in the widest part, tapering to the extremities; the head transverse, about two thirds as wide as the body in its widest part, with two brown jaws. Color very pale yellow. Like the preceding, there appear to be slight projections from the sides of the body at times.

Pupa.—At the time of writing this, December 12th, all the specimens I have are in the larva state. A few went through with their transformations during the summer, but a much smaller number than of the preceding species. August 30th, two specimens of the imago were obtained from culms, having gnawed their holes of egress nearly large enough to emerge, but one was so injured in cutting open the stalk that it was not preserved. The form and color of pupa can only be guessed from the empty cases of those found in the culms.

Described from one female specimen found hatched in a stalk of *Elymus Canadensis*, August 30th, 1881.

THE OLDEST FIGURES OF NORTH AMERICAN INSECTS.

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The *Gazophylacium* of Jacob Petiver, Apothecary in London (died 1715) is a very rare book, as the plates and the catalogues were printed and published at different times between 1695 and 1715. They were collected later and published by Mr. Empson, an officer of the British Museum and a natural son of Sir Hans Sloane, in 1764, in London, with the title, "*Jacobi Petiveri Opera, etc., or Gazophylacium, 2 vol. fol.*" A small volume in 8vo contains the original sheets published by Petiver between 1695 and 1706. The library of the Museum of Comp. Zool. at Cambridge possesses a copy presented, June 1765 by Emanuel Mendez da Costa, Librarian of the Royal Society, to Thomas Knowlton. The collection of J. Petiver, at least the Lepidoptera, is still preserved in the British Museum, and was seen by me in 1857. Every butterfly is placed between two thin plates of mica, fastened with a small